



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, DC 20380-0001

MCO 4400.179A
C2CMO
23 Jul 92

MARINE CORPS ORDER 4400.179A

From: Commandant of the Marine Corps
To: Distribution List

Subj: MATERIEL FIELDING PLAN (MFP) FOR THE DIGITAL
TROPOSCATTER MULTICHANNEL RADIO SET, AN/TRC-170 (V) 5

Encl: (1) Materiel Fielding Plan (MFP) for the Digital
Troposcatter Multichannel Radio Set, AN/TRC-170 (V) 5

1. Purpose. The enclosure provides information to the FMF commanders regarding support and placing into service the Digital Troposcatter Multichannel Radio Set, AN/TRC-170 (V) 5.


2. Cancellation: MCO 4400.179.

3. Information. The TRC-170 (V) 5 is the Marine Corps' particular version of the AN/TRC-170 (V) 3. The AN/TRC-170 (V) 5, when completed by the receiving unit, will consist of the radio shelter, two high mobility multi-purpose wheeled vehicles, two generators, one microwave antenna group, one environmental control unit, and one M116A2 trailer, as well as associated cabling and additional ancillary items.

4. Action. The gaining and supporting commands are responsible for performing the actions specified in paragraph 4 of the enclosure.

5. Summary of Revision. This revision contains a substantial number of changes and should be completely reviewed.

6. Reserve Applicability. This Order is applicable to the Marine Corps Reserve.


J. A. BRABHAM
By direction

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MATERIEL FIELDING PLAN, (MFP) FOR

THE DIGITAL TROPOSCATTER MULTICHANNEL RADIO SET, AN/TRC-170 (V) 5

1. Introduction

a. Source of Requirement. The requirement for the AN/TRC-170 (V) 5 is specified in the Required Operational Capability CCC 256.1.2 for the Digital Wideband Transmission System. This revised ROC was approved on 12 September 1988 by the Assistant Commandant of the Marine Corps (ACMC).

b. Points of Contact

<u>TITLE</u>	<u>NAME</u>	<u>ADDRESS/CODE</u>	<u>TELEPHONE</u>
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c. Fielding Methodology

(1) General Fielding Plan. The AN/TRC-170 (V) 5, will be fielded with a combination of "horizontal and vertical" fielding beginning in fiscal year 1992.

(2) Method of Fielding. The AN/TRC-170 (V) 5 will be force-fed to Fleet Marine Force units after Commander, Marine Corps Logistics Bases (COMMARCORLOGBASES), Albany, GA has married the shelterized radio with the Heavy High Mobility Multi-Purpose Wheeled Vehicle (H-HMMWV), a generator synchronizer, cables, ancillary components, and an M116A2 trailer. COMMARCORLOGBASES (Code 847-2), Albany, will provide facilities to receive

ENCLOSURE (1)

23 Jul 92

AN/TRC-170 (V) 5 radio shelters as they are shipped by the manufacturer. They will provide the installation of Digital Group Multiplexers (DGM) as well as Government Furnished Equipment (GFE). COMMARCORLOGBASES (Code 847-2), Albany, will ensure completeness, less the OE-468/TRC microwave antenna group, one M-1037 HMMWV, two generators, one ECU, and cryptographic equipment. COMMARCORLOGBASES (Code 847-2), Albany will ship the completed units per appendix A.

d. Replaced Weapon Systems. The AN/TRC-170 (V) 5 will replace the AN/GRC-201 and AN/TCC-72A TAMCN A1825 and A2682. COMMARCORLOGBASES (Code 847-2), Albany, will provide specific disposition instructions after the AN/TRC-170 (V) 5's are in place.

2. System Description

a. Administrative Information

(1) Nomenclature (P1): Digital Troposcatter Radio Terminal

(2) TAMCN: A2179-VII-GP

(3) ID Number: 08658A

(4) NSN: 5895-01-354-7601

(5) JETDS Nomenclature: AN/TRC-170 (V) 5

(6) Manufacturer: Raytheon, Unisys Corp

(7) Manufacturer's Model Number: AN/TRC-170 (V) 5

(8) Stores Account Code (SAC): 3

(9) Unit of Issue: Each

(10) Unit Cost: \$600,000.00

(11) Support Cost: \$10,000

(12) CARF: Not applicable

(13) Readiness Reporting: The AN/TRC-170 (V) 5 shall be subject to MARES readiness reporting per Marine Corps bulletin 3000 series.

ENCLOSURE (1)

23 Jul 92

(14) Equipment Density: Critical Low Density(15) Petroleum, Oil, and Lubricants: Diesel fuel, generators - 2 1/2 gallons by 24 hrs = 60 gallons per day

Gasoline/SAE 30 wt oil mix, Pionjar Drill - 1 gal per day

(16) Combat/Mission Essential: Yes(17) Controlled Item: Yes(18) Weapon System Code: FW(19) Power Requirements:(a) Volts: 208(b) Frequency: 60 Hz(c) Phase: 3(d) Watts: 6 KW, max(e) Source: Two dedicated MEP-3A generators

(20) The complete AN/TRC-170 (V) 5 system will consist of the shelterized radio as described above, but will also include HMMWV's, generators, an antenna group, an ECU, and a trailer as well as appropriate cabling, and ancillary components.

b. Physical Characteristics

	<u>Operational Configuration</u>	<u>Storage/Shipping Configuration</u>
(1) <u>Length</u> :	345 in	345 in
(2) <u>Width</u> :	170 in	170 in
(3) <u>Height</u> :	111 in	111 in
(4) <u>Square</u> :	407 sq ft	407 sq ft
(5) <u>Cube</u> :	3767 cu ft	3767 cu ft

ENCLOSURE (1)

23 Jul 92

(6) <u>Weight</u> :	27519 lbs	27519 lbs
(7) <u>Stowage</u> :	407 sq ft	407 sq ft

c. Operational Characteristics. The AN/TRC-170 (V) 5 is a Tactical, Digital Troposcatter Multichannel Radio Set that provides digital communications in the super high frequency, (SHF) band. It has a 4.4 to 5.0 GHz frequency range. It operates in a line-of-sight (LOS) or tropospheric scatter, (troposcatter) mode and has a range of up to 100 miles. It will transmit and receive secure or plain digital voice and data traffic. The AN/TRC-170 (V) 5 interfaces with other TRI-TAC and current inventory equipment, and may be used in stand-alone applications to carry dedicated and common-user communication traffic. Such traffic might include; analog and digital voice channels; interswitch trunks; long local and point-to-point subscribers; and facsimile or teletype circuits. The AN/TRC-170 (V) 5 will be employed at the MEF, division, and wing headquarters levels.

d. Associated Systems/Equipment. Unless noted, the following items will be supplied with the AN/TRC-170 (V) 5.

- (1) Radio Shelter
 - Nomenclature: OW-91A/TRC-170 (V)
 - NSN: 5820-01-213-3187
 - (a) TSEC/KY-58 (Provided by gaining command)
 - Nomenclature: 5810-00-449-0154
 - TAMCN: A8032
 - (b) TSEC/KG-194A'S (Provided by gaining command)
 - Nomenclature: 5810-01-283-1394
 - TAMCN: A8089
- (2) HMMWV's
 - (a) Nomenclature: M-1037 (From the rolling stock supporting the AN/GRC-201)
 - NSN: 2320-01-146-7193
 - (b) Nomenclature: M-1037 (Supplied with the AN/TRC-170 (V) 5)
 - NSN: 2320-01-346-9317

ENCLOSURE (1)

23 Jul 92

- (3) Generators (Provided by the gaining command)
Nomenclature: MEP-3A
NSN: 6115-00-465-1030
TAMCN: B0891
- (4) Antenna Group (Retained from the AN/GRC-201)
Nomenclature: OE-468/TRC Microwave Antenna Group
NSN: 5985-01-305-7682
TAMCN: A0926 (To be deleted)
- (5) ECU, with SMV-18, Skid Mounting Assembly,
(Provided by the gaining command)
Nomenclature: B0003 Air Conditioner
NSN: 4120-00-959-4453
TAMCN: B0003
- (6) Synchronizer, (Generator Switchover Box)
Nomenclature: SN-571/TRC-170 (V)
NSN: 5895-01-310-2545
- (7) Power Cable System
 - (a) Nomenclature: Cable, Power
NSN: 5995-01-134-3159
 - (b) Nomenclature: Cable Stub
NSN: 5995-01-190-5573
 - (c) Nomenclature: Reel, Cable
NSN: 8130-00-711-0537
- (8) Pionjar Drill (Retained with the OE-468/TRC)
NSN: 3820-01-092-7465
- (9) Trailer, for ECU & generator transportation
Nomenclature: M116A2
TAMCN: D0085

3. Logistic Support

a. Maintenance Concept

(1) Organizational Level Maintenance. Organizational maintenance actions are performed at the onsite location and includes, but are not limited to, equipment setup and teardown; repair of prime mission equipment; servicing, alignment, and lubrication; Built-In Test Equipment (BITE), fault analysis/diagnosis; removal and replacement of faulty assemblies, Lowest

ENCLOSURE (1)

23 Jul 92

Repair Units (LRU's), and Circuit Card Assemblies (CCA's); scheduled maintenance; preventive maintenance; corrosion prevention; modifications; performance testing and troubleshooting using support equipment. Faulty LRU identification, removal, replacable, traditionally associated with 3d echelon maintenance will now be performed at 2d echelon.

(2) Intermediate Level Maintenance. DGM equipment, generators, HMMWV's, and ECU's, which have already been fielded, will have intermediate maintenance performed per current directives. Component repair will be accomplished at the intermediate level. Component repair will be accomplished using a combination of USM-465 and Huntron 5100 diagnostic GPTE.

(3) Depot Level Maintenance. Depot maintenance will be performed at Sacramento Air Logistic Center (SM-ALC). Programmed Depot Maintenance (PDM), as described in the TROPO specification requires that the equipment be designed for a service life of 10 years without overhaul or rebuilding. PDM capability will, therefore, be required. Depot level overhaul may also be required for major modifications. Emergency and unscheduled depot maintenance may be required for battle or transportation damaged equipment. Damage from catastrophic and/or premature failures will also require this level of maintenance. Emergency and unscheduled depot maintenance will be supported per TO 00-25-108.

(4) Contractor Support. Contractor assistance teams will be provided to the gaining command to assist in initial setup and LTI of the AN/TRC-170 (V) 5 upon receipt.

b. Manpower, Personnel, and Training

(1) Personnel Requirements. Since this is a replacement for the AN/GRC-201 there are no new personnel requirements. Personnel operating and maintaining the AN/GRC-201 will perform those same actions on the AN/TRC-170 (V) 5.

(2) Training Requirements

(a) Operator Training. There are no new training requirements. The 2532, Multichannel Equipment Operator's course at MCCES will transition to AN/TRC-170 (V) 5's in FY 1993.

(b) Maintenance Training. Only organizational level training will be provided to 2831's. The 2832's will be trained to perform component repair on the AN/TRC-170 (V) 5.

ENCLOSURE (1)

(c) Instructor and Key Personnel Training, (I&KPT)

MCCES has attended classes conducted at Keesler Air Force Base. MCCES personnel are in the process of formulating 2532, 2831, 2832 courseware and syllabus.

(d) New Equipment Training Team, (NETT)

COMMARCORSSYSCOM (PSL-MT) will provide, through the Air Force at Keesler Air Force Base, NETT sessions to retrain current 2532 and 2831 Marines on the AN/TRC-170 (V) 5 at Camp Lejeune, Camp Pendleton, and Camp Hansen, Okinawa.

c. Supply Support. Initial Issue Provisioning (IIP) is scheduled to be released during FY 1993. Follow-on support will be through the normal Marine Corps Supply System.

d. Support Equipment

(1) Special Tools. Not applicable.

(2) Common Tools

(a) Nomenclature: MK-2569/P
TAMCN: H7920

(b) Nomenclature: 5/16 inch Allen Wrench
NSN: 5120-00-240-5274

(3) Special Purpose Test Equipment

(a) Nomenclature: TS-4162/TRC, Radio Test Set,
(Loop Test Set)
NSN: 6625-01-183-8962

(b) Nomenclature: Remote Antenna Alignment Meter

These items will be overpacked in the OW-91A/TRC radio shelter and delivered as component parts of the AN/TRC-170 (V) 5 to the gaining commands.

(4) General Purpose Test Equipment

(a) Nomenclature: AN/PSM-37
TAMCN: H2336

(b) Nomenclature: Huntron 5100
TAMCN: A7501 AN/USM-646

ENCLOSURE (1)

23 Jul 92

(c) Nomenclature: Digital Card Tester
TAMCN: A7590 AN/USM-465B

e. Technical Publications. Technical manuals will be overpacked into each shelterized radio at MARCORLOGBASES, Albany. An additional set of manuals will be force-fed to the gaining command. Additional copies can be requisitioned through MARCORLOGBASES, Albany.

Basic Manuals

TM 08658A-14/1 Vol 1	18408658100	TRC-170
TM 08658A-14/1 Vol 2	18408658200	TRC-170
TM 08658A-14/1 Vol 3	18408658300	TRC-170
TM 08658A-14/1 Vol 4	18408658400	TRC-170
TM 08658A-14/1 Vol 5	18408658500	TRC-170
TM 08658A-14/1 Supp 1	18408658000	TRC-170
TM 09280A-14 P/1	18409280000	OE-468/TRC

Support Manuals

TM 08761A-12/1	18407985500	MD-1026
TM 08761A-34P/3	18408676100	MD-1026
TM 5805-12/1	18204799100	TD-1235
TM 5805-34P/2	18204804200	TD-1235
TM 5805-12/2	18204799200	TD-1236
TM 5805-34P/3	18204804300	TD-1236
TM 11-5810-262-12	35158543000	TSEC/KY (1st Echelon)
TM 11-5810-262-OP	35158543100	TSEC/KY-58 (2nd Echelon)
TM 11-5810-365-10	35158553900	TSEC/KG-194A
TM 11-5810-363-23	35158584000	TSEC/KG-94A/194A
TM 11-5810-365-24P	35158580000	TSEC/KG-94A/194A
TM 5-4120-339-14	34601770200	Air-Conditioner
TM-5-4120-339-24P	34601770400	Air-Conditioner
TO 33A1-7-288-1	60000300000	Loop Test Set MK-2569
TO 31R2-2TRC170-06-1	60000291000	Planned PM Work Card
TM 05684C/05685B-12	18405684700	Generator Set MEP-003
SL-4-05684C/05685B	12405584200	Generator Set MEP-003
TM 2320-10/6	18000232100	HMMWV M1037 M1049

f. Computer Resources Support. Not applicable.

g. Facilities. No changes from the AN/GRC-201.

ENCLOSURE (1)

23 Jul 92

h. Packaging, Handling, Storage, and Transportation

(1) Packaging. Packing of items being prepared for long term storage, Prepositioned War Reserved (PWR), and surface shipment overseas will be developed per MIL-STD-2073-1A. Items scheduled for shipment to CONUS units for limited storage or immediate use will be packaged per the Standard Practice for Commercial Packaging, ASTM D3951-88.

(2) Handling. No special handling requirements.

(3) Storage. Maritime Prepositioned Ships (MPS) stocks designated for dehumidified storage aboard ships may also be accepted in commercial packaging, ASTM D3951-88.

(4) Transportation. The AN/TRC-170 (V) 5, Digital Troposcatter Multichannel Radio Set will be shipped per MCO P4600.14B, The Defense Traffic Management Regulation (DTMR) and DoD 4500.32-R, Military Standard Transportation and Movement Procedures (MILSTAMP). When the AN/TRC-170 (V) 5 is stowed for movement, it will possess a roll on/roll off capability with the two HMMWV's, antenna trailer, and generator trailer. Certification will be required for helicopter and rail transport capability.

i. Warranties. This procurement does not meet the warranty requirement outlined in MCO 4105.2, dated 4 November 1987. Therefore, a warranty will not be obtained.

4. Actions Required To Place Equipment In Service

a. Gaining Command. Designate a specific AN/GRC-201 for replacement as an AN/TRC-170 (V) 5 is received. Utilize the replaced AN/GRC-201 for selective parts interchange if required. When directed, ship the replaced AN/GRC-201 to COMMARCORLOGBASES (Code 847-2), Albany. Designate a HMMWV from the unit's Equipment Allowance File (EAF) to complete the AN/TRC-170 (V) 5 configuration. The AN/TRC-170 (V) 5 shall be subject to MARES readiness reporting.

(1) Requisition T/E shortages.

(2) Obtain supporting consumables.

(3) Acceptance inspection upon receipt.

(4) Submit controlled item report.

ENCLOSURE (1)

23 Jul 92

(5) Request authorization to place the AN/TRC-170 (V) 5 in service.

(6) Retrograde/dispose of replaced item(s) per subsequent instructions.

b. COMMARCORSSYSCOM

(1) EAF Allowance Data. Ensure action is initiated to reflect appropriate current allowance data on the EAF to approximately coincide with the projected in-service date.

(2) Fielding. Provide guidance to appropriate activities to initiate the fielding process or notify activities of any problems or issues that delay fielding beyond the projected in-service date.

c. COMMARCORLOGBASES, Albany

(1) Equipment Issue. Issue the equipment per the fielding methodology in paragraph 1c.

(2) Shipping. Notify all concerned activities of shipping information.

(3) Fielding Delays. Notify all concerned activities of any delays which affect the fielding process.

ENCLOSURE (1)

23 Jul 92

LIST OF ALLOWANCES AND DELIVERY SCHEDULE

T/E NO	UNIT TITLE	PLANNED	FY 92				FY 93				FY 94				FY 95			
		UNIT	QTR				QTR				QTR				QTR			
		ALLOWANCE	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
7720	Comm Elec School	9			9													
H4024	Det, Comm SptCo, CommBnMps 1	4														4		
H8612	Det, MW Comm Sq MACG/MPS 1	4														4		
I4024	Det, Comm SptCo, Comm Bn MPS 2	4														4		
I8612	Det, MW Comm Sq MACG/MPS 2	4														4		
J4024	Det, Comm SptCo, Comm Bn MPS 3	4														4		
J8612	Det, MW Comm Sq, MACG/MPS 3	4														4		
N4684	Comm SptCo, CommBn, 1st SRI GP	8			8													
N4784	Comm SptCo, CommBn, 2d SRI GP	8			8													
N4884	Comm SptCo, CommBn, 3d SRI GP	8			8													
N8652	Marine Wing ACE CommDet,	8 (6)							16		16		16					
N8612	Marine Wing Comm Sqd MACG MAW	8 (2)									2				14			
N4044	Comm SptCo, CommBn, 4th MEF	8											2		6			
7011	MCLB Barstow, CA	3														3		
7014	MCLB Albany, GA	2														2		
TOTALS		134			9	8	8	8	16	21	8	16	14	22	13			

Appendix A to
ENCLOSURE (1)

SCHEDULE OF EVENTS

- (1) IIP ready for issue EID - 31 Dec 92, A4M - 31 Dec 92
- (2) Stock List type 3, (SL-3) availability 1 Oct 92
- (3) Initial Operational Capability, (IOC) 2d Qtr 93
- (4) Final Operational Capability, (FOC) 4th Qtr 95

Appendix B to
ENCLOSURE (1)

B-1

MCO 4400.179A
23 Jul 92

DISTRIBUTION SCHEDULE FOR PROVISIONING PROJECTS

<u>PROVISIONING</u> <u>PROJECT #</u>	<u>EST FIELD</u> <u>DATE</u>	<u>INITIAL ISSUE</u> <u>PARTS RELEASE DATE</u>	<u>CONSIGNEE</u>	<u>STATUS</u>
E1D	6 OCT 92	31 DEC 92	Mr. Coon	
A2B	6 OCT 92	31 DEC 92	Mr. Coon	
U6N	6 OCT 92	31 DEC 92	Mr. Coon	
U60	6 OCT 92	31 DEC 92	Mr. Coon	
U6P	6 OCT 92	31 DEC 92	Mr. Coon	

Appendix C to
ENCLOSURE (1)